

WHAT IS CLAIMED IS:

1. A surface acoustic wave filter, comprising:
a piezoelectric substrate;
a plurality of IDTs provided on said piezoelectric substrate, and arranged along a propagation direction of a surface acoustic wave;
a balanced-to-unbalanced conversion function; and
at least two of said plurality of IDTs located on opposite sides of an IDT of said plurality of IDTs located at a central portion of said piezoelectric substrate being disposed in an approximate point-symmetry about the IDT located at the central portion in the propagation direction of a surface acoustic wave.
2. A surface acoustic wave filter in accordance with claim 1, wherein the IDT electrically connected to said balanced signal terminals has an even number of electrode fingers.
3. A surface acoustic wave filter in accordance with claim 1, wherein at least one IDT includes a plurality of IDT portions divided along a direction that is substantially perpendicular to the propagation direction of a surface acoustic wave.

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4. A surface acoustic wave filter in accordance with claim 1, further comprising at least one surface acoustic wave resonator connected to said surface acoustic wave filter in at least one of series and parallel.

5. A surface acoustic wave filter in accordance with claim 1, further comprising reflectors provided at end portions of said piezoelectric substrate.

6. A communication device having the surface acoustic wave filter in accordance with claim 1.

7. A surface acoustic wave filter, comprising:
a piezoelectric substrate;

first, second and third IDTs provided on said piezoelectric substrate, and sequentially arranged along a propagation direction of a surface acoustic wave;

an unbalanced signal terminal connected to the first and third IDTs; and

first and second balanced signal terminals each connected to opposite ends of the second IDT;

the first, second and third IDTs each having first and second end portions at opposite ends thereof in a direction that is substantially perpendicular to the propagation

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direction of a surface acoustic wave;

the first end portion of the first IDT and the second end portion of the third IDT being each electrically connected to said unbalanced signal terminal; and

the second end portion of the first IDT and the first end portion of the third IDT being each connected to a ground potential.

8. A surface acoustic wave filter in accordance with claim 7, wherein the IDT electrically connected to said balanced signal terminals has an even number of electrode fingers.

9. A surface acoustic wave filter in accordance with claim 7, wherein at least one IDT includes a plurality of IDT portions divided along the direction substantially perpendicular to the propagation direction of a surface acoustic wave.

10. A surface acoustic wave filter in accordance with claim 7, further comprising at least one surface acoustic wave resonator connected to said surface acoustic wave filter in at least one of series and parallel.

11. A surface acoustic wave filter in accordance with

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claim 7, further comprising reflectors provided at end portions of said piezoelectric substrate.

12. A communication device having the surface acoustic wave filter in accordance with claim 7.

13. A surface acoustic wave filter, comprising:
a piezoelectric substrate;

first, second and third IDTs provided on said piezoelectric substrate, and sequentially arranged along the propagation direction of a surface acoustic wave;

an unbalanced signal terminal connected to the second IDT; and

first and second balanced signal terminals each connected to the first and third IDT;

the first, second and third IDTs each having first and second end portions at opposite ends thereof in a direction that is substantially perpendicular to the propagation direction of a surface acoustic wave;

the first end portion of the first IDT and the second end portion of the third IDT being each electrically connected to a first balanced signal terminal; and

the second end portion of the first IDT and the first end portion of the third IDT being each electrically connected to a second balanced signal terminal.

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14. A surface acoustic wave filter in accordance with claim 13, wherein the IDT electrically connected to said balanced signal terminals has an even number of electrode fingers.

15. A surface acoustic wave filter in accordance with claim 13, wherein at least one IDT includes a plurality of IDT portions divided along the direction that is substantially perpendicular to the propagation direction of a surface acoustic wave.

16. A surface acoustic wave filter in accordance with claim 13, further comprising at least one surface acoustic wave resonator connected to said surface acoustic wave filter in at least one of series and parallel.

17. A surface acoustic wave filter in accordance with claim 13, further comprising reflectors provided at end portions of said piezoelectric substrate.

18. A communication device having the surface acoustic wave filter in accordance with claim 13.

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